October 1996
No. 60109

JVC Service Manual

VIEWFINDER

MODEL VF-P116U
MODEL VF-P116E

VICTOR COMPANY OF JAPAN, LIMITED

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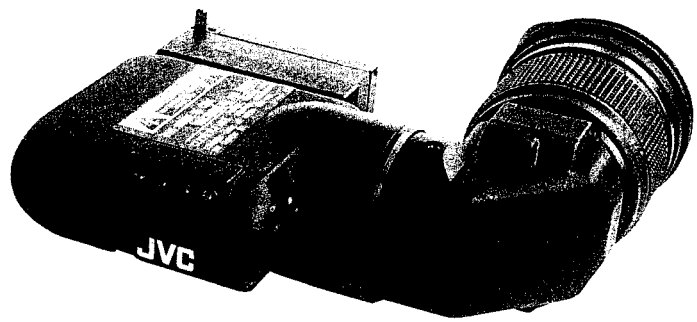
No. 60109

JVC Service Manual



MODEL VF-P116

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Note:
The electrical parts numbers listed on the manual are organized by new JVC standard parts system. The new parts numbers are different from previous numbers, even if the components are same.

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JVC

VIEWFINDER

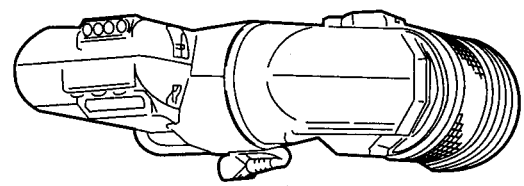
VF-P116

INSTRUCTIONS

For Customer Use:
Enter below the Serial No. which is located on the bottom. Retain this information for future reference.

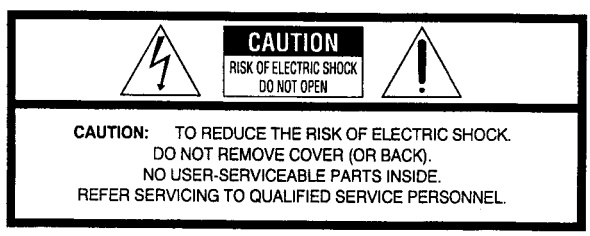
Model No. VF-P116

Serial No. _____



SC96773

Thank you for purchasing the JVC VF-P116 Viewfinder. To gain maximum benefit from the viewfinder, it is suggested that you study this booklet carefully. After reading, retain it for future reference.


CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN
CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK.
DO NOT REMOVE COVER (OR BACK).
NO USER-SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING:
TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE.

This unit should be used with 12 V DC only.
CAUTION:
To prevent electric shocks and fire hazards, do NOT use any other power source.

POWER SYSTEM

Connection of power supply
The VF-P116 viewfinder is designed only for connection to KY-27series, KY-19, GY-X2B color video cameras. Power is supplied from the camera.

■ PRECAUTIONS

- The VF-P116 is designed exclusively for use with KY-27series, KY-19, GY-X2B color video cameras. See the KY-27series, KY-19, GY-X2B color video camera instruction manual for using this viewfinder.
- The screen may glare when connected with the GY-X2B. Consult with your local JVC dealer when this occurs.
- Prevent water and metallic objects from entering the unit as this could lead to malfunctions.
- Do not expose the unit to excessive shock. Especially be careful not to apply shocks and vibrations when installing or during transpiration.
- Avoid using the unit in places subject to excessive humidity, head, or strong magnetic or electric fields.
- Do not disassemble or modity the unit. Do not use the unit with its cover removed.
- Strong electromagnetic waves or magnetism (for example, near a radio or TV transmission antenna, transformer or motor) Can interfere with the image and generate spurious noise.

■ VIEWFINDER ATTACHING/DETACHING

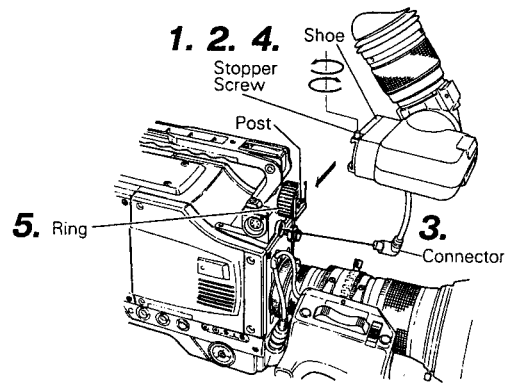
1. Loosen the stopper screw.

2. Attach the viewfinder with its shoe aligned with the post.

3. Connect the Connector.

4. Tighten the stopper screw.

5. Tighten the ring.



■ CONTROLS, INDICATORS, CONNECTORS

❶ STOPPER SCREW
This stopper screw prevents the viewfinder from coming off the camera.

❷ VIEWFINDER SHOE
Attaches to the Viewfinder Post on camera.

❸ CONNECTOR
Connect to camera socket.

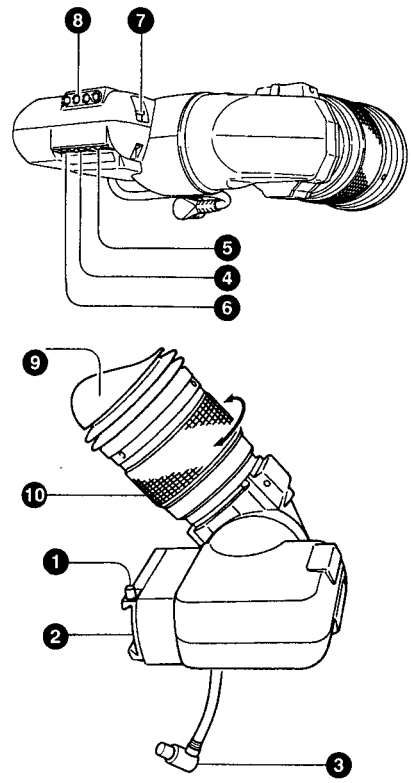
❹ CONTRAST
Controls the level of Viewfinder contrast.

❺ BRIGHT
Controls the level of Viewfinder brightness.

❻ PEAKING
Controls the level of viewfinder peaking.

❼ TALLY SWITCH
Set this switch to off if you do not want to inform the subjects by the tally light that they are being recorded.

❽ TALLY LIGHT
Lights when recording is in progress.



⑨ EYEPIECE

Blocks light from viewfinder screen and holds eye optics.

The Eyepiece can be opened to view the screen directly.

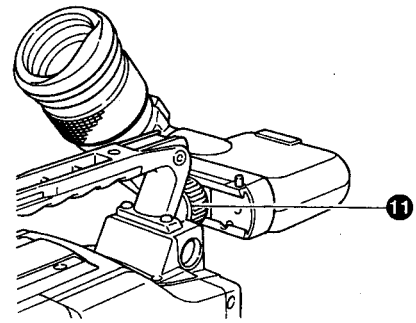
The Eyepiece can be rotated up and down for the best shooting position.

⑩ EYEPIECE FOCUSING RING

Loosen this ring and move the Eyepiece backward and forward to focus the viewfinder for the operators vision.
Be sure to perform this adjustment before shooting because this will affect lens focusing.
A favorable result will be obtalend by adjustment with contour ⑥

⑪ VIEWFINDER SLIDE LOCKING RING

This ring on the camera viewfinder post can be loosened move the viewfinder to the left or right for the best operator comfort.



■ TROUBLESHOOTING

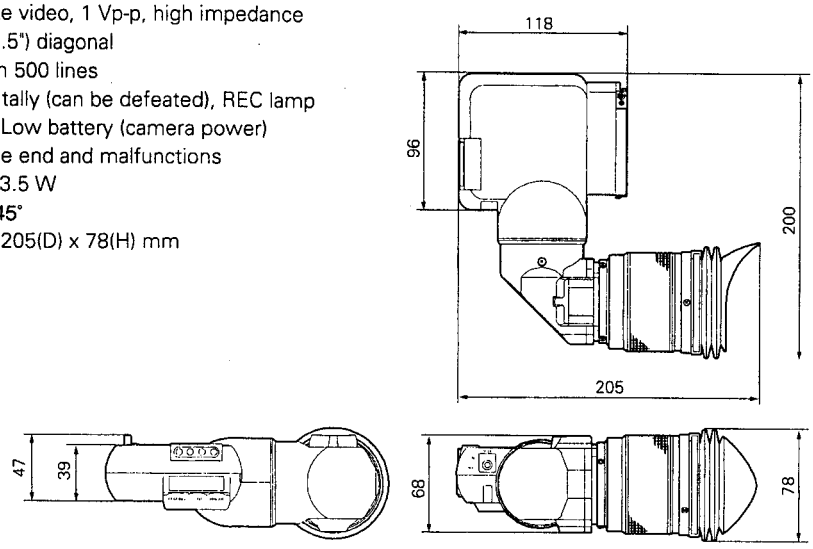
Symptom	Check
No raster. Dark screen.	Are the brightness and contrast controls correctly set?
No picture on the screen.	Is the camera's Return switch set to OFF?

See the KY-27series, KY-19, GY-X2B color video camera Instruction manual for details.

■ SPECIFICATIONS

Input signal	:	Composite video, 1 Vp-p, high impedance
CRT	:	38 mm (1.5") diagonal
Resolution	:	More than 500 lines
Indications	:	Tally; Top tally (can be defeated), REC lamp Warning; Low battery (camera power) VTR's tape end and malfunctions
Power consumption	:	12 V DC, 3.5 W
Operating temperature	:	−5° to +45°
Dimensions	:	200(W) x 205(D) x 78(H) mm
Weight	:	0.75 kg

•Dimensions (unit mm)



•Designa and specifications are subject to change without notice.

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SC96773

SECTION 1
DISASSEMBLY

1. 1 REMOVAL OF COVER

1. Remove three screws ① and detach the slide base Ⓐ.

Fig. 1-1

2. Remove two screws ② and detach the VF base Ⓑ.

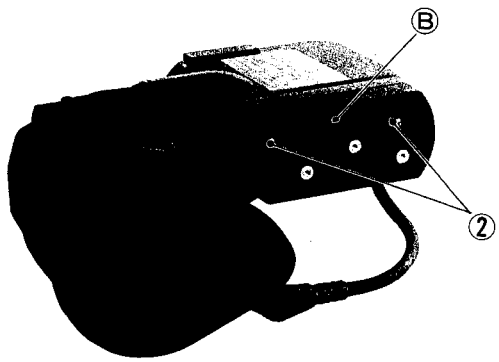


Fig. 1-2

3. Remove one screw ③, and the bottom cover Ⓒ can be opened in the direction of the arrow.

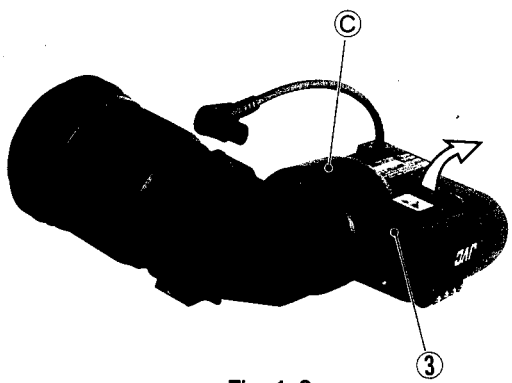


Fig. 1-3

1. 2 REMOVAL OF CRT

1. Open the bottom cover referring to "1. 1 REMOVAL OF COVER".
2. Remove two screws ④ from on the mirror case Ⓓ and pull out the CRT together with the CRT holder Ⓔ from the mirror case Ⓓ.

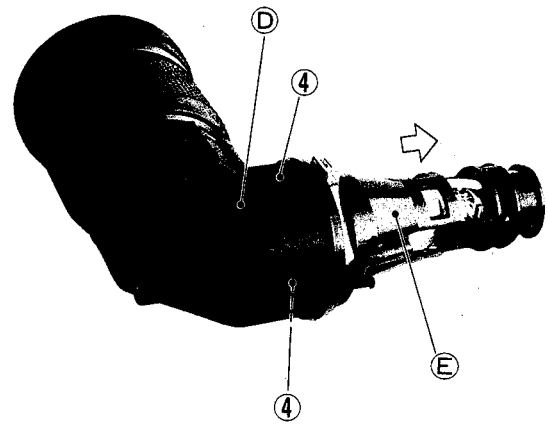


Fig. 1-4

3. Remove the ring Ⓕ in the manner to open it.

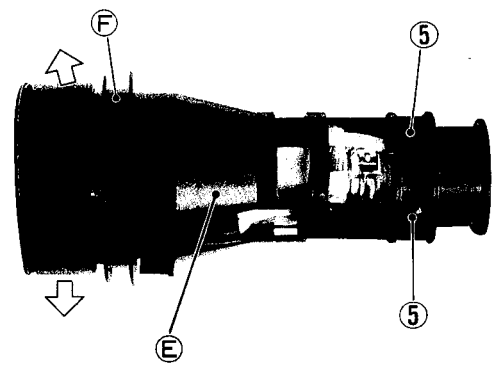


Fig. 1-5

4. Remove two screws ⑤ (one in the opposite side) and then open the CRT holderⒺ. (See Fig. 1-5)

5. Remove the socket Ⓖ.

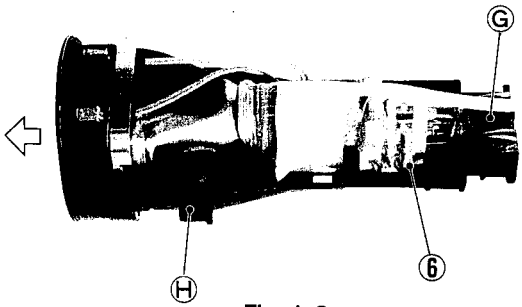


Fig. 1-6

6. Shortcircuit the anode of the CRT to the chassis or the FBT cover for discharge, and then disoonnect the anode plug Ⓗ.
   Note: The anodic electrode is located inside the rubber cover of the anode plug Ⓗ. When discharging, be careful not to get an electric shock.
7. Loosen one screw ⑥ fixing the CRT to the deflection yoke and then pull the CRT out of the deflection yoke in the direction of the arrow (⇦) . (See Fig. 1-6)

● When reassembilng the CRT to the set, put the spring Ⓘ onto the pin on the bottom cover without fail.

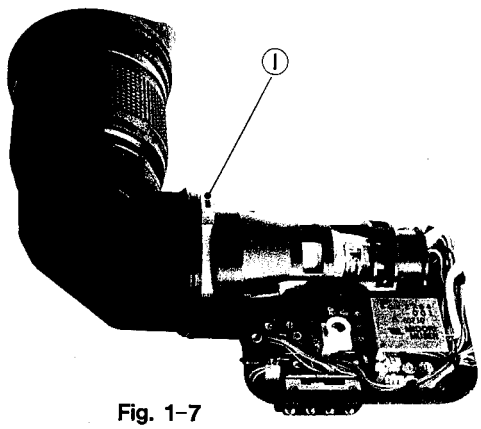


Fig. 1-7

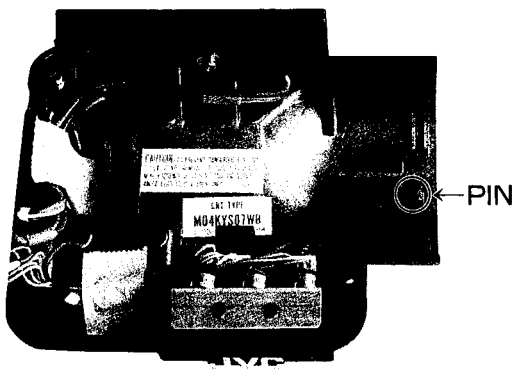


Fig. 1-8

1. 3 REMOVAL OF MAIN BOARD

1. Open the bottom cover referring to "1. 1 REMOVAL OF COVER".
2. Remove four screws ⑦ and the MAIN board can be detached.

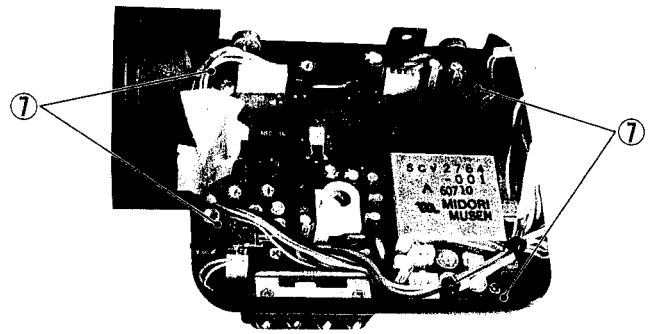


Fig. 1-9

1. 4 ATTACHING TO GY-X2B

1. Set the VF PEAKING LEVEL (VR701) on the SE board of GY-X2B to the counter-clockwise fully.

SECTION 2
ELECTRICAL ADJUSTMENT

2. 1 ARTICLES REQUIRED FOR ADJUSTMENT

2. 1. 1 Measuring instrumemts necessary for adjustment

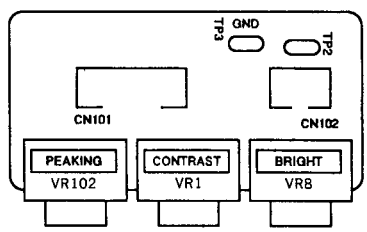
Measuring instrument	Requirement
Oscilloscope	Capable of measuring 10 MHz or higer band, and calibrated
Frequency counter	Readable in 8 or more digits. Constancy of 0. 1ppm/1×10^{-7} or more at 0°C to 40°C
Digital voltmeter	Input impedance of 10 MΩ or more, and calibrated

2. 1. 2 Other necessities for adjustment

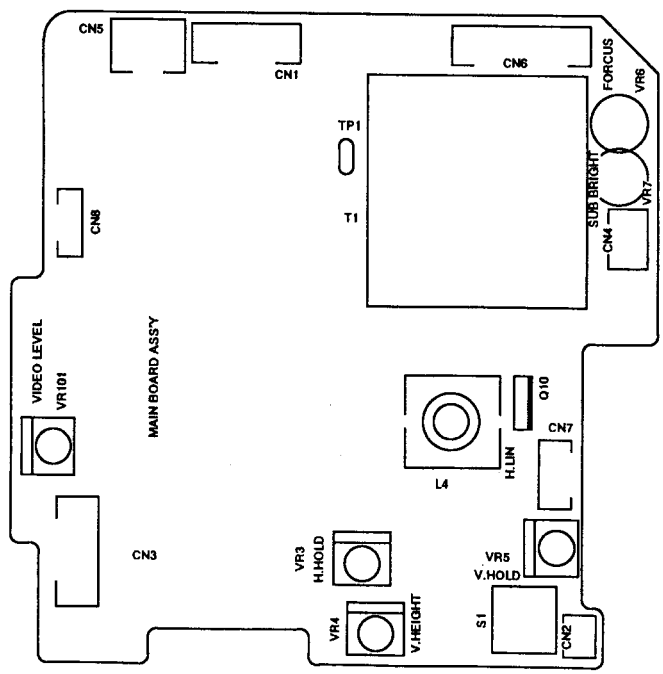
Camera and lens

2. 2 LOCATION OF ADJUSTMENT PARTS

●VR board



●MAIN board



No.	Item	Measuring instruments & input signals	Measuring point (◎) Adjustment parts (ⓘ) Adjustment level (☆)	Adjutment procedure

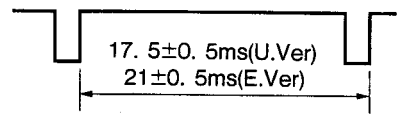
2. 3 CHECK OF SUPPLY VOLTAGE

1	12V supply voltage check	● Digital voltmeter	◎ Between pin 5 of CN1 and GND [MAIN] ☆ +12V	1) check to see if the specified voltage is measured at the measuring point.

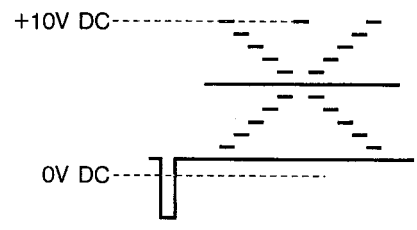
2. 4 ADJUSTMENT OF H. HOLD

1	H. HOLD adjustment	● Frequency counter	◎ Between collector of Q10 [MAIN] and TP3(GND) [VR] ⓘ H. HOLD(VR3) [MAIN] ☆ 14.4 to 15kHz	1) Adjust VR3 to obtain the specified frequency at the measuring point.

2. 5 ADJUSTMENT OF V. HOLD

1	V. HOLD adjustment	● Oscilloscope (V-rate, 10:1)	◎ TP2 and TP3(GND) [VR] ⓘ V. HOLD(VR5) [MAIN] ☆ 17 to 18ms(U.Ver) ☆ 20.5 to 21.5ms(E.Ver)	1) Adjust VR5 to obtain the specified level at the measuring point. 

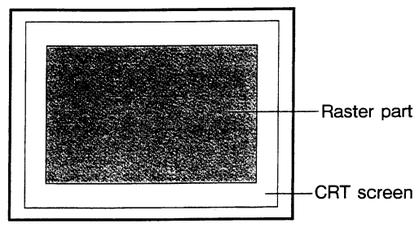
2. 6 ADJUSTMENT OF VIDEO LEVEL

1	Video level adjustment	● Gray scale chart ● Oscilloscope (H-rate, 10:1)	◎ TP1 [MAIN] and TP3 (GND) [VR] ⓘ VIDEO LEVEL ADJ(VR101) [MAIN] ☆ +10V DC	1) Shoot the gray (scale) chart by the camera. 2) Observing the waveform on oscilloscope, adjust VR101 to obtain the specified level at the measuring point. 

No.	Item	Measuring instruments & input signals	Measuring point (◎) Adjustment parts (ⓣ) Adjustment level (☆)	Adjutment procedure

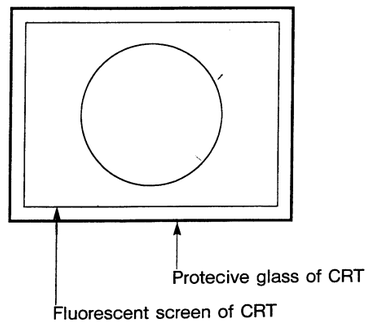
2. 7 ADJUSTMENT OF CENTERING

1	Centering adjustment		ⓣ BRIGHT(VR8) [VR] CONT(VR1) [VR]	1) Set the BRIGHT and CONT controls on the front panel to the mechanical center position respectively.
			ⓣ H. LIN(L4) [MAIN] V. HEIGHT(VR4) [MAIN]	1) Reduce the raster part by tuning the H. LIN and V. HEIGHT controls.
			ⓣ DY centering magnet [Deflection yoke]	1) Adujst the DY centering magnet of the deflection yoke so as to position the raster part in the center of the CRT.



2. 8 ADJUSTMENT OF H. LINEARITY

1	H. linearity adjustment	●Resolution chart of Registration chart	ⓣ H. LIN(L4) [MAIN]	1) Shoot the resolution chart or registration chart so as to take the central circle of the chart as large as possible. 2) Adjust the H. LIN control so that the linearity of the picture is aligned in both the sides.



No.	Item	Measuring instruments & input signals	Measuring point (◎) Adjustment parts (ⓣ) Adjustment level (☆)	Adjutment procedure

2. 9 ADJUSTMENT OF V. AMPLITUDE

1	V. amplitude adjustment	●Resolution chart or Registration chart	ⓣ V. HEIGHT(VR4) [MAIN]	1) Shoot the resolution chart or registration chart so as to take the central circle of the chart as large as possible. 2) Adjust the V. HIGHT control so that the central circle of the chart shows a perfect circle. 3) If the central circle looks ellipitical, fine adjust the H. LIN control(L4)to correct it.

2. 10 ADJUSTMENT OF SUB-BRIGHTNESS

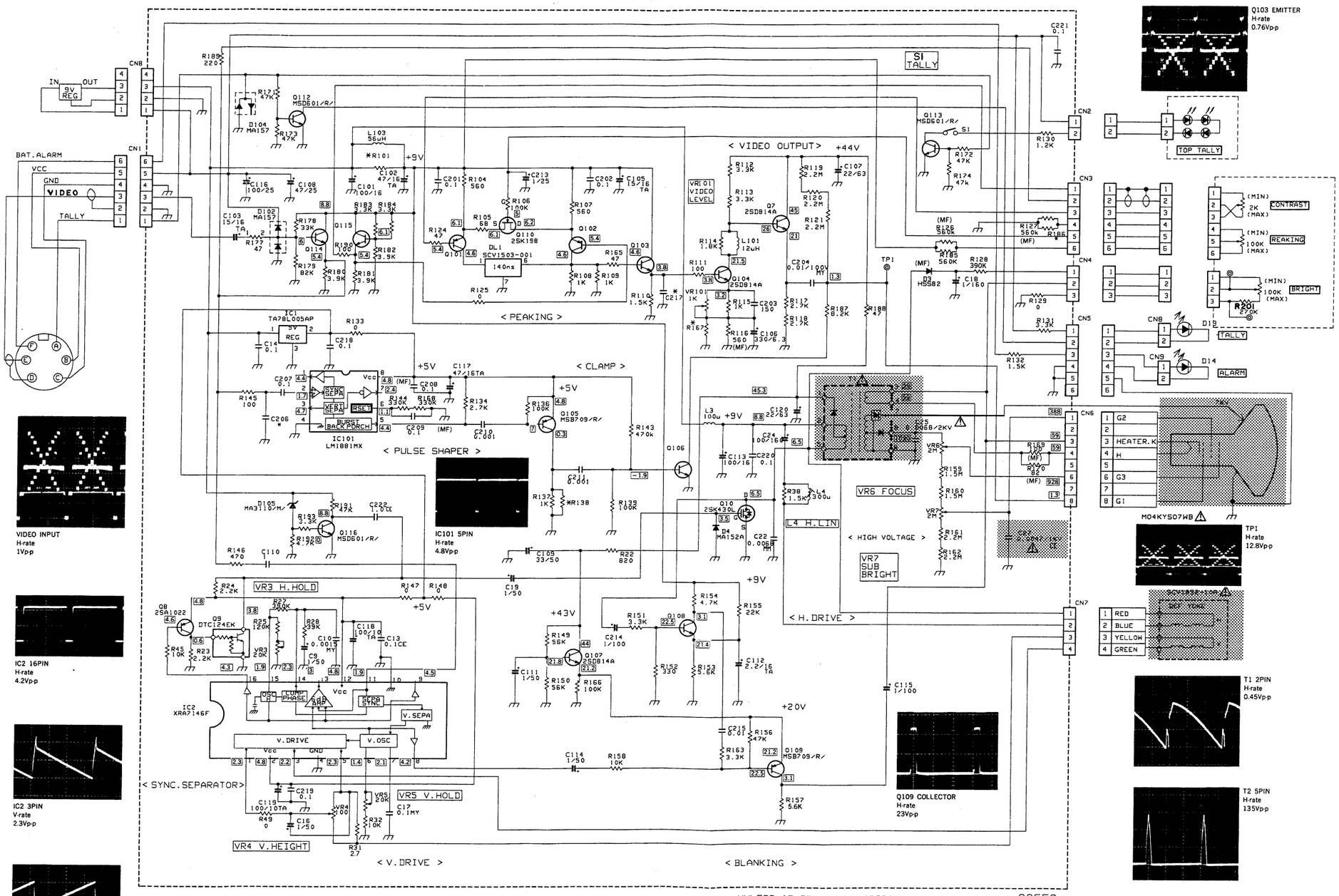
1	Sub-brightness adjustment		ⓣ SUB BRIGHT(VR7) [MAIN]	1) Set the BRIGHT and PEAKING controls on the front panel to the minimum position, while set the CONT control to the maximum position. 2) Adjust the SUB BRIGHT control so that the raster is seen dimly.

2. 11 ADJUSTMENT OF FOCUS

1	Focus adjustment		ⓣ FOCUS(VR6) [MAIN]	1) Shoot an object by the camera. 2) Set the CONT and PEAKING controls on the front panel to the mechanical center position respectively. 3) Turn up and down the brightness with the BRIGHT control on the front panel while adjusting the FOCUS control to obtain the best focus.

SECTION 3
CHART AND DIAGRAM

3. 1 VF-P116 SCHEMATIC DIAGRAM



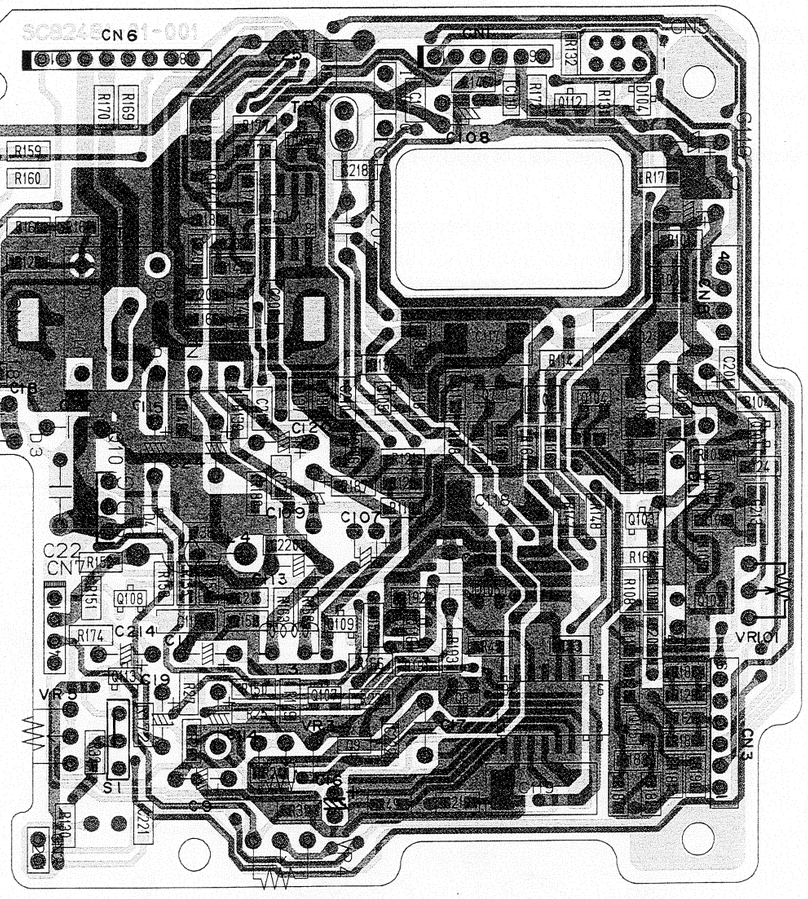
UNLESS OTHERWISE SPECIFIED 92558

PNP TRANSISTORS:MSA1022/C/
NPN TRANSISTORS:MSC2295/C/
RESISTORS :1/10W
*MARKED PARTS:NOT MOUNTED

3. 2 CIRCUIT BOARDS

● MAIN board

— B SIDE —



SECTION 4
EXPLODED VIEW AND PARTS LIST

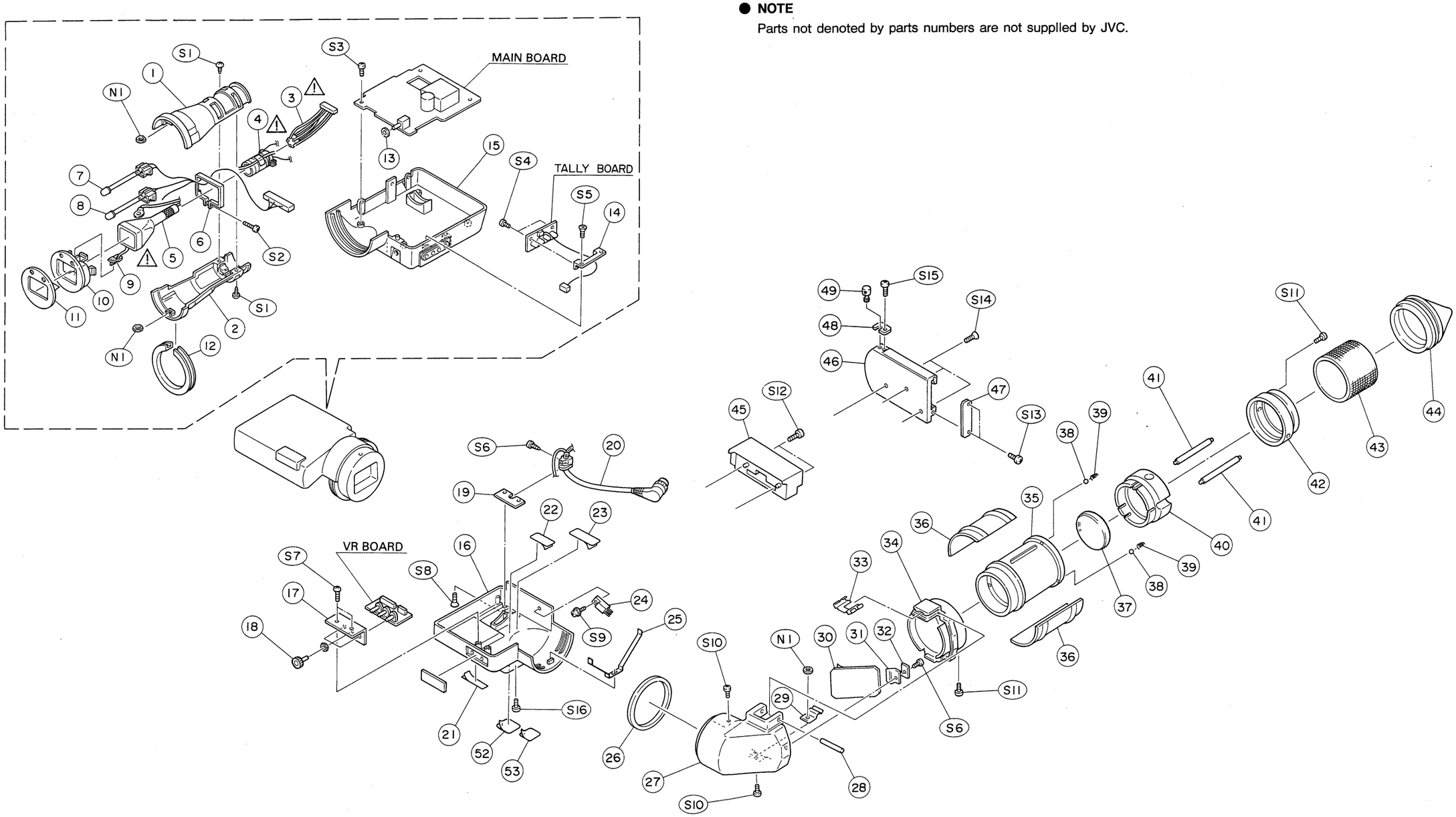
■VF ASSEMBLY

● **SAFETY PRECAUTION**

Parts identified by the ⚠ symbol are critical for safety.
Replace only with specified parts numbers.

● **NOTE**

Parts not denoted by parts numbers are not supplied by JVC.



■VF-P116 ASSEMBLY PARTS LIST [M][1]

[M][1][M][M]□□□□

Symbol No.	Part No.	Part Name	Description
1	SC31312-012	CRT HOLDER	
2	SC31312-011	CRT HOLDER	
⚠ 3	SCV1273-001	C.R.T.SOCKET	
⚠ 4	SCV1852-10A	DEFLECTION YOKE	
⚠ 5	M04KYS07WB	CRT	
6	SC43463-001	CRT HOLDER	
7	TLG102A LED	GREEN	
8	TLR102A LED	RED	
9	SC40909-001	EARTH TERMINAL	
10	SC31314-011	HOLDER	
11	SC43615-013	CRT PLATE	
12	SC44495-001	RING	
13	SC43468-001	CUSHION	
14	SC44730-001	BRACKET	
15	SC20430-011	UPPER CASE	
16	SC20431-003	BOTTOM CASE	
17	SC46070-001	VR BRACKET	
18	SC44724-002	VR KNOB	
19	SC44729-011	CLAMP BASE	
20	SCV2801-00A	VF CABLE ASS'Y	
21	SC44975-001	LABEL	
22	SC46020-001	CRT LABEL	
23	SC41663-001	CAUTION LABEL	
24	AN7709F	I.C.(M)	MATSUSHITA
25	SC44965-001	SPRING	
26	SC46019-001	SPACER	
27	SC20336-011	CASE	
28	SC43459-002	PIN	
29	SC43460-002	PLATE	
30	SC46045-001	MIRROR	
31	SC43462-001	MIRROR HOLDER	
32	SC43614-001	HOLDER PLATE	
33	SC43491-002	SPRING	
34	SC31041-013	HOLDER	
35	SC31889-001	EYE FRAME	
36	SC31890-001	CAM HOLDER	
37	SC42475-001	LENS	
38	SC40465-020	STEEL BALL	
39	SC46021-001	SPRING	
40	SC31888-001	LENS HOLDER	
41	SC44736-041	SHAFT	
42	SC45702-001	FRONT RING	
43	SC43164-001	RING	
44	SC31337-001	CAP	
45	SC31891-001	BASE	
46	SC31339-021	SLIDE BASE	
47	SC44680-001	PLATE	
48	SC44679-001	PLATE	
49	SC44678-002	STOPPER PIN	
50	SC41737-011	LABEL	for U model

Symbol No.	Part No.	Part Name	Description
52	SC42594-001	LABEL	for U model
53	SC45925-001	LABEL	for E model
N1	NNS2600N	NUT	
S1	SBSF2608M	SCREW	M2.6×8
S2	SPSP2008Z	SCREW	M2×8
S3	LPSP2605Z	SCREW	M2.6×5
S4	SDSP2004M	SCREW	M2×4
S5	SSSP2006N	SCREW	M2×6
S6	SPSA2006M	SCREW	M2×6
S7	SDSP2006M	SCREW	M2×6
S8	SSSK2030M	SCREW	M2×3
S9	DPSP2608Z	SCREW	M2.6×8
S10	SDSP2606M	SCREW	M2.6×6
S11	SPSK2040M	SCREW	M2×4
S12	SPSP2615Z	SCREW	M2.6×15
S13	SPSK2030M	SCREW	M2×3
S14	SSSP2606M	SCREW	M2.6×6
S15	SPSK2025M	SCREW	M2×2.5
S16	SDSP2608M	SCREW	M2.6×8(Serial No.****0110 and before)
S16	SDSP2610M	SCREW	M2.6×10(Serial No.****0111 and after)

SECTOIN 5
ELECTRICAL PARTS LIST

SAFETY PRECAUTION:
Parts identifled by the ⚠ symbol are crltical for safety. Replace only with specified parts numbers.
For maximum reliability and performance, all other replacement parts should be identical to those specified.

NOTE:
- Parts not denoted by parts numbers are not supplled by JVC.
- Abbreviations in this list are as follows:

RESISTORS
in the "Description" column:
All resistanec Values are in ohms(Ω).
K expresses kilo-ohm(1 000 ohms, kΩ).
M expresses mega-ohm(108 ohms, MΩ).

In the "Parts Name" column:
COMP. RESISTOR :Composition Resistor
U. F. RESISTOR :Nor-inflammable Resistor
O. M. F. RESISTOR:Oxide Metallzed Fiim Resistor
FUSI. RESISTOR :Fusble Resistor
M. P. RESISTOR :Metal Plate Resistor
M. G. RESTSTOR :Metal Graze Resistor
M. F. RESISTOR :Metal Film Resistor
W. W. RESISTOR :Wlre Wound Resistor

CAPACITORS
in the "Description" column:
All capacitance values are in microfarad(μF)unless otherwise Ingicated.
P expresses picofarad(10^{-12} farad, pF).

In the "Parts Name" column:
TRIM. CAPACITOR:Trimmer Capacitor
CER. CAPACITOR :Ceramic Capacitor
E. CAPACITOR :Electrolytic Capacitor
TAN. CAPACITOR :Tantalum Capacitor
MPP CAPACITOR :Metalized Polypropylene Capacitor
O. F. CAPACITOR :Oil Film Capacitor
MPF CAPACITOR :Metalized Polyfilm Capacitor
F. M. CAPACITOR :Film Mica Capacitor
P. P. CAPACITOR :Polypropylene Capacitor
P. S. CAPACITOR :Polystyrene Capacitor

- The electrical parts numbers listed on the manual are organized by new JVC standard parts system. The new parts numbers are different from previous numbers, even if the components are same.

5.1 MAIN BOARD ASSEMBLY PARTS LIST [0][1]

SCK2481-01-00A [0][1][ ][ ][ ][ ][ ][ ]

Symbol No.	Part No.	Part Name	Description	
IC1	TA78L005AP	I.C.(M)	TOSHIBA	
IC2	XRA7146F-X	I.C.(M)	EXAR	
IC101	LM1881M-X	I.C.(M)	NATIONAL SEMICO	
Q7	2SD814A/QR/-X	TRANSISOR	MATSUSHITA	
Q8	MSA1022/C/-X	TRANSISOR	MOTOROLA	
Q9	DTC124EKA-X	TRANSISOR	ROHM	
Q10	2SK430L	FET	HITACHI	
Q101	MSA1022/C/-X	TRANSISOR	MOTOROLA	
Q102	MSA1022/C/-X	TRANSISOR	MOTOROLA	
Q103	MSC2295/C/-X	TRANSISOR	MOTOROLA	
Q104	2SD814A/QR/-X	TRANSISOR	MATSUSHITA	
Q105	MSB709/R/-W	TRANSISOR	MOTOROLA	
Q106	MSC2295/C/-X	TRANSISOR	MOTOROLA	
Q107	2SD814A/QR/-X	TRANSISOR	MATSUSHITA	
Q108	MSC2295/C/-X	TRANSISOR	MOTOROLA	
Q109	MSB709/R/-W	TRANSISOR	MOTOROLA	
Q110	2SK198(R)TX	FET	MATSUSHITA	
Q112	MSD601/R/-X	TRANSISOR	MOTOROLA	
Q113	MSD601/R/-X	TRANSISOR	MOTOROLA	
Q114	MSC2295/C/-X	TRANSISOR	MOTOROLA	
Q115	MSC2295/C/-X	TRANSISOR	MOTOROLA	
Q116	MSD601/R/-X	TRANSISOR	MOTOROLA	
D3	HSS82-T2	DIODE	HITACHI	
D4	M1MA152A-X	DIODE	MOTOROLA	
D102	MA157A-W	DIODE	MATSUSHITA	
D104	MA157A-W	DIODE	MATSUSHITA	
D105	MA3110(M)-X	ZENER DIODE	MATSUSHITA	
R22	NRSA02J-821X	M.G.RESISTOR	820	1/10W
R23	NRSA02J-222X	M.G.RESISTOR	2.2k	1/10W
R24	NRSA02J-222X	M.G.RESISTOR	2.2k	1/10W
R25	NRSA02J-124X	M.G.RESISTOR	120k	1/10W
R27	NRSA02J-394X	M.G.RESISTOR	390k	1/10W
R28	NRSA02J-393X	M.G.RESISTOR	39k	1/10W
R31	NRSA02J-2R7X	M.G.RESISTOR	2.7k	1/10W
R32	NRSA02J-103X	M.G.RESISTOR	10k	1/10W
R38	NRSA02J-152X	M.G.RESISTOR	1.5k	1/10W
R45	NRSA02J-103X	M.G.RESISTOR	10k	1/10W
R49	NRSA02J-0R0X	M.G.RESISTOR	0	1/10W
R104	NRSA02J-561X	M.G.RESISTOR	560	1/10W
R105	NRSA02J-680X	M.G.RESISTOR	68	1/10W
R106	NRSA02J-104X	M.G.RESISTOR	100k	1/10W
R107	NRSA02J-561X	M.G.RESISTOR	560	1/10W
R108	NRSA02J-102X	M.G.RESISTOR	1k	1/10W
R109	NRSA02J-102X	M.G.RESISTOR	1k	1/10W
R110	NRSA02J-152X	M.G.RESISTOR	1.5k	1/10W
R111	NRSA02J-101X	M.G.RESISTOR	100	1/10W
R112	NRSA02J-332X	M.G.RESISTOR	3.3k	1/10W
R113	NRSA02J-332X	M.G.RESISTOR	3.3k	1/10W
R114	NRSA02J-182X	M.G.RESISTOR	1.8k	1/10W
R115	NRSA02J-102X	M.G.RESISTOR	1k	1/10W
R116	NRVA02D-561X	C.M.F.RESISTOR	560	1/10W
R117	NRSA02J-272X	M.G.RESISTOR	2.7k	1/10W
R118	NRSA02J-272X	M.G.RESISTOR	2.7k	1/10W
R119	NRSA02J-225X	M.G.RESISTOR	2.2M	1/10W
R120	NRSA02J-225X	M.G.RESISTOR	2.2M	1/10W
R121	NRSA02J-225X	M.G.RESISTOR	2.2M	1/10W

Symbol No.	Part No.	Part Name	Description	
R124	NRSA02J-470X	M.G.RESISTOR	47	1/10W
R125	NRSA02J-0R0X	M.G.RESISTOR	0	1/10W
R126	NRVA02D-564X	C.M.F.RESISTOR	560k	1/10W
R127	NRVA02D-564X	C.M.F.RESISTOR	560k	1/10W
R128	NRSA02J-334X	M.G.RESISTOR	330k	1/10W
R129	NRSA02J-0R0X	M.G.RESISTOR	0	1/10W
R130	NRSA02J-122X	M.G.RESISTOR	1.2k	1/10W
R131	NRSA02J-332X	M.G.RESISTOR	3.3k	1/10W
R132	NRSA02J-152X	M.G.RESISTOR	1.5k	1/10W
R133	NRSA02J-0R0X	M.G.RESISTOR	0	1/10W
R134	NRSA02J-272X	M.G.RESISTOR	2.7k	1/10W
R136	NRSA02J-104X	M.G.RESISTOR	100k	1/10W
R137	NRSA02J-102X	M.G.RESISTOR	1k	1/10W
R139	NRSA02J-104X	M.G.RESISTOR	100k	1/10W
R143	NRSA02J-474X	M.G.RESISTOR	470k	1/10W
R144	NRVA02D-334X	C.M.F.RESISTOR	330k	1/10W
R145	NRSA02J-101X	M.G.RESISTOR	100	1/10W
R146	NRSA02J-471X	M.G.RESISTOR	470	1/10W
R147	NRSA02J-0R0X	M.G.RESISTOR	0	1/10W
R148	NRSA02J-0R0X	M.G.RESISTOR	0	1/10W
R149	NRSA02J-563X	M.G.RESISTOR	56k	1/10W
R150	NRSA02J-563X	M.G.RESISTOR	56k	1/10W
R151	NRSA02J-332X	M.G.RESISTOR	3.3k	1/10W
R152	NRSA02J-331X	M.G.RESISTOR	330	1/10W
R153	NRSA02J-562X	M.G.RESISTOR	5.6k	1/10W
R154	NRSA02J-472X	M.G.RESISTOR	4.7k	1/10W
R155	NRSA02J-223X	M.G.RESISTOR	22k	1/10W
R156	NRSA02J-473X	M.G.RESISTOR	47k	1/10W
R157	NRSA02J-562X	M.G.RESISTOR	5.6k	1/10W
R158	NRSA02J-103X	M.G.RESISTOR	10k	1/10W
R159	NRSA02J-155X	M.G.RESISTOR	1.5M	1/10W
R160	NRSA02J-155X	M.G.RESISTOR	1.5M	1/10W
R161	NRSA02J-225X	M.G.RESISTOR	2.2M	1/10W
R162	NRSA02J-225X	M.G.RESISTOR	2.2M	1/10W
R163	NRSA02J-332X	M.G.RESISTOR	3.3k	1/10W
R165	NRSA02J-470X	M.G.RESISTOR	47	1/10W
R166	NRSA02J-104X	M.G.RESISTOR	100k	1/10W
R168	NRVA02D-334X	C.M.F.RESISTOR	330k	1/10W
R169	NRVA02D-101X	C.M.F.RESISTOR	100	1/10W
R170	NRVA02D-820X	C.M.F.RESISTOR	82	1/10W
R171	NRSA02J-473X	M.G.RESISTOR	47k	1/10W
R172	NRSA02J-473X	M.G.RESISTOR	47k	1/10W
R173	NRSA02J-473X	M.G.RESISTOR	47k	1/10W
R174	NRSA02J-473X	M.G.RESISTOR	47k	1/10W
R177	NRSA02J-470X	M.G.RESISTOR	47	1/10W
R178	NRSA02J-333X	M.G.RESISTOR	33k	1/10W
R179	NRSA02J-823X	M.G.RESISTOR	82k	1/10W
R180	NRSA02J-392X	M.G.RESISTOR	3.9k	1/10W
R181	NRSA02J-392X	M.G.RESISTOR	3.9k	1/10W
R182	NRSA02J-392X	M.G.RESISTOR	3.9k	1/10W
R183	NRSA02J-332X	M.G.RESISTOR	3.3k	1/10W
R184	NRSA02J-332X	M.G.RESISTOR	3.3k	1/10W
R185	NRVA02D-564X	C.M.F.RESISTOR	560k	1/10W
R187	NRSA02J-822X	M.G.RESISTOR	8.2k	1/10W
R188	NRSA02J-470X	M.G.RESISTOR	47	1/10W
R189	NRSA02J-221X	M.G.RESISTOR	220	1/10W
R190	NRSA02J-101X	M.G.RESISTOR	100	1/10W
R191	NRSA02J-473X	M.G.RESISTOR	47k	1/10W

Symbol No.	Part No.	Part Name	Description
R192	NRSA02J-472X	M.G.RESISTOR	4.7k 1/10W
R193	NRSA02J-332X	M.G.RESISTOR	3.3k 1/10W
VR3	QVPB609-203Z	TRIM.RESISTOR	20k H.HOLD
VR4	QVPB609-101Z	TRIM.RESISTOR	100 V.HEIGHT
VR5	QVPB609-203Z	TRIM.RESISTOR	20k V.HOLD
VR6	QVP0025-205	TRIM.RESISTOR	2M FOCUS
VR7	QVP0025-205	TRIM.RESISTOR	2M SUB BRIGHT
VR101	QVPB609-102Z	TRIM.RESISTOR	1k VIDEO LEVEL
C9	QER61HM-105Z	E.CAPACITOR	1 50V
C10	QFN31HJ-152Z	M.F.CAPACITOR	1500P 50V
C13	NCB21EK-104X	CER.CAPACITOR	0.1 25V
C14	NCB21EK-104X	CER.CAPACITOR	0.1 25V
C16	QER41HM-105	E.CAPACITOR	1 50V
C17	QFB51EJ-104Z	MPPS CAPACITOR	0.1 25V
C18	QETN2CM-105Z	E.CAPACITOR	1 160V
C19	QER61HM-105Z	E.CAPACITOR	1 50V
C22	QFZ0190-682	FILM CAPACITOR	6800P
C24	QETN1CM-107Z	E.CAPACITOR	100 16V
⚠C25	QCZ0319-682	CER.CAPACITOR	6800P 2kV
⚠C27	QCZ0318-472	CER.CAPACITOR	4700P 1kV
C101	QETN1CM-107Z	E.CAPACITOR	100 16V
C102	NBE71CM-476X	TAN.CAPACITOR	47 16V
C103	NBE41CM-156X	TAN.CAPACITOR	15 16V
C105	NBE41CM-156X	TAN.CAPACITOR	15 16V
C106	QETN0JM-337Z	E.CAPACITOR	330 6.3V
C107	QETL1JM-226	E.CAPACITOR	22 63V
C108	QETL1EM-476	E.CAPACITOR	47 25V
C109	QETN1HM-336Z	E.CAPACITOR	33 50V
C110	NCB11CK-105X	CER.CAPACITOR	1 16V
C111	QER61HM-105Z	E.CAPACITOR	1 50V
C112	NBE21CM-225X	TAN.CAPACITOR	2.2 16V
C113	QETN1CM-107Z	E.CAPACITOR	100 16V
C114	QER61HM-105Z	E.CAPACITOR	1 50V
C115	QETN2AM-105Z	E.CAPACITOR	1 100V
C116	QETN1EM-107Z	E.CAPACITOR	100 25V
C117	NBE71CM-476X	TAN.CAPACITOR	47 16V
C118	NEE51AM-107NZM	E.CAPACITOR	100 10V
C119	NEE51AM-107NZM	E.CAPACITOR	100 10V
C120	QETN1JM-226Z	E.CAPACITOR	22 63V
C201	NCB21EK-104X	CER.CAPACITOR	0.1 25V
C202	NCB21EK-104X	CER.CAPACITOR	0.1 25V
C203	NDC21HJ-151X	CER.CAPACITOR	150P 50V
C204	QFLC2AK-103Z	MYLAR CAPACITOR	0.01 100V
C207	NCB21EK-104X	CER.CAPACITOR	0.1 25V
C208	NCB21EK-104X	CER.CAPACITOR	0.1 25V
C209	NCB21EK-104X	CER.CAPACITOR	0.1 25V
C210	NDC21HJ-102X	CER.CAPACITOR	1000P 50V
C211	NDC21HJ-102X	CER.CAPACITOR	1000P 50V
C213	NBE21EM-105X	TAN.CAPACITOR	1 25V
C214	QETN2AM-105Z	E.CAPACITOR	1 100V
C215	NCB21HK-103X	CER.CAPACITOR	0.01 50V
C218	NCB21EK-104X	CER.CAPACITOR	0.1 25V
C219	NCB21EK-104X	CER.CAPACITOR	0.1 25V
C220	NCB21EK-104X	CER.CAPACITOR	0.1 25V
C221	NCB21EK-104X	CER.CAPACITOR	0.1 25V
C222	NCB11CK-105X	CER.CAPACITOR	1 16V

Symbol No.	Part No.	Part Name	Description
L3	GP42267-021	COIL	100uH
L4	SCV1983-001	COIL	300uH H.LIN
L101	NQL054K-120X	COIL	12uH
L103	NQL054K-560X	COIL	56uH
DL1	SCV1503-001	DELAY LINE	140ns
S1	SCV1275-001	TOGGLE SWITCH	TALLY
CN1	SCV1227-006	CONNECTOR	6PIN
CN2	SSV1591-S02	CONNECTOR	2PIN
CN3	SSV1591-S06	CONNECTOR	6PIN
CN4	SSV1591-S03	CONNECTOR	3PIN
CN5	SCV2608-006	CONNECTOR	6PIN
CN6	SCV1227-008	CONNECTOR	8PIN
CN7	SCV1227-004	CONNECTOR	4PIN
CN8	SSV1591-S04	CONNECTOR	S04PIN
TP1	SQMX001-001Z	TEST POINT	
⚠T1	SCV2764-001	F.B.T	

5.2 VR BOARD ASSEM [0][2]

SCK2481-02-00A [0][2]□□□□□□

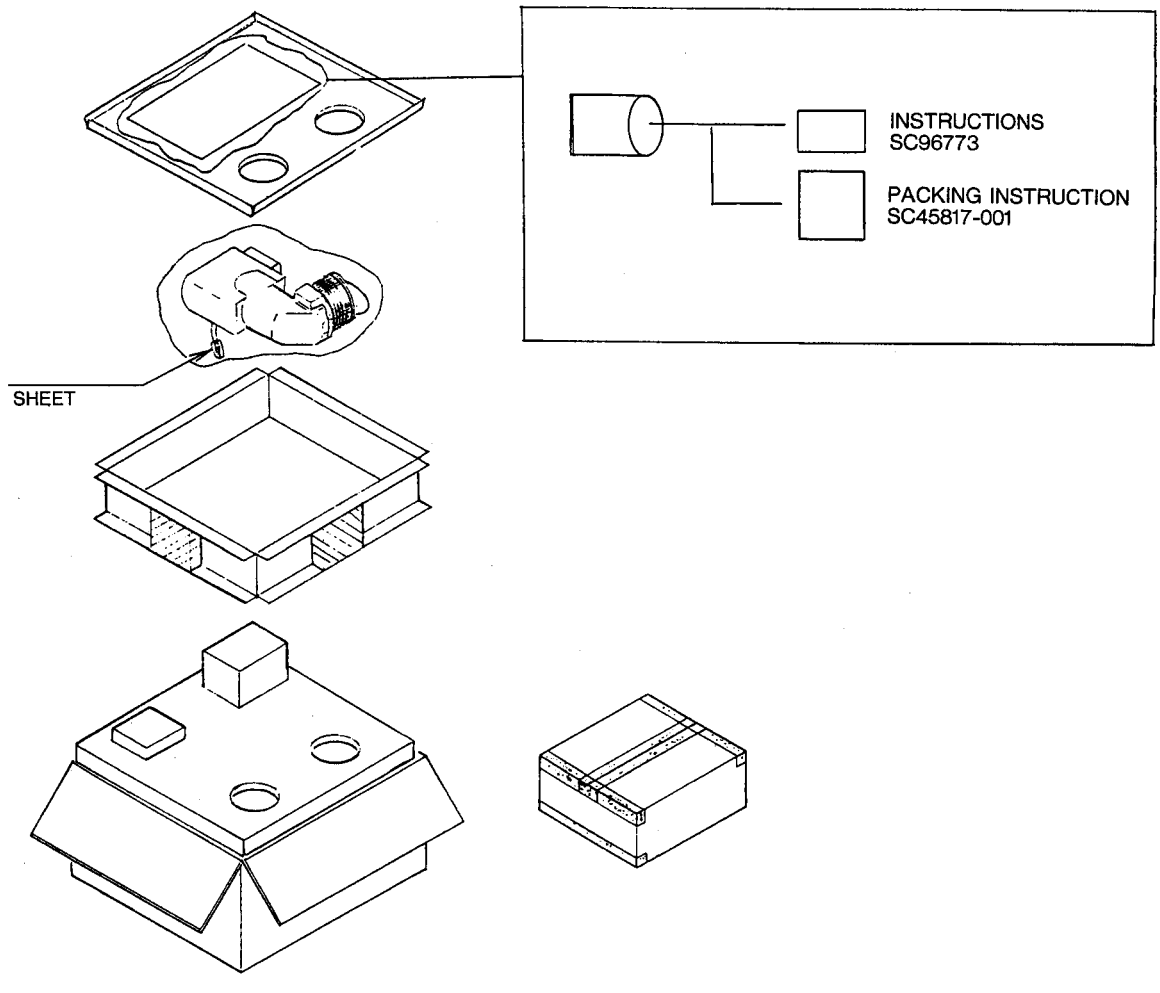
Symbol No.	Part No.	Part Name	Description
R201	NRSA02J-394X	M.G.RESISTOR	390k 1/10W
VR1	SCV0381-202	V RESISTOR	2k CONTRAST
VR8	SCV0381-104	V RESISTOR	100k PEAKING
VR102	SCV0381-104	V RESISTOR	100k BRIGHT
CN102	SSV1591-S03	CONNECTOR	3PIN
TP2	SQMX001-001Z	TEST POINT	
TP3	SQMX001-001Z	TEST POINT	

5.3 TALLY BOARD ASSEMBLY PARTS LIST [0][3]

SCK2267-03-00A [0][3]□□□□□□

Symbol No.	Part No.	Part Name	Description
D5	ER-300	LED	
D6	ER-300	LED	
D7	ER-300	LED	
D8	ER-300	LED	
SP5	SC43656-015	LED SPACER	
SP6	SC43656-015	LED SPACER	
SP7	SC43656-015	LED SPACER	
SP8	SC43656-015	LED SPACER	

SECTION 6
REPACKING



Note: Accessories above are subject to change without notice.